

CITY OF BALTIMORE

CATHERINE E. PUGH, Mayor



DEPARTMENT OF PUBLIC WORKS

Rudolph S. Chow, P.E., Director
Abel Wolman Municipal Building, 6th Floor
200 N. Holliday Street
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December 21, 2017

Lisa Donahue
Ground Water and Enforcement Branch (3WP22)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103-2029

Saeid Kasraei, Administrator
Water Supply Program
Maryland Department of the Environment
1800 Washington Blvd., Suite 450
Baltimore, MD 21230

RE: Administrative Order on Consent and Settlement Agreement
Open Finished Water Reservoir Compliance
City of Baltimore, Maryland, PWS ID# MD0300002

Dear Ms. Donahue and Mr. Kasraei,

The City of Baltimore is transmitting three (3) copies of the referenced Administrative Order on Consent and Settlement Agreement, Quarterly Report No. 33, dated December 20, 2017. In accordance with Articles 26 and 27 of the EPA Administrative Order on Consent and Article 3 of the MDE Settlement Agreement, this report addresses the City's progress on the treatment or replacement of the five open finished water reservoirs. We trust that this Report adequately addresses the information required. If you have any questions or require further clarification, please do not hesitate to contact me at 410-396-3310 or the Office of Engineering and Construction, Acting Chief, Mr. Azzam Ahmad at 410-396-3437.

Sincerely,


Rudolph S. Chow, P.E.
Director

Enclosure

GS/sf

cc: Ms. Dawn Lettman, Esq.
Mr. Azzam Ahmad
Ms. Virginia F. Kearney, MDE
Ms. Nancy Young, MDE
Mr. Phillip Yeany, Esq. EPA
Ms. Cierra Richardson

Mr. Paul DeSantis, Esq.
Mr. James Price
Mr. Gurminder Singh
Ms. Cathy Stump
Mr. Bruce McClure
Ms. Sherell Flanagan

City of Baltimore

**Long Term 2 Enhanced Surface
Water Treatment Rule**
for
Open Finished Water Reservoirs

Settlement Agreement

Dated September 2, 2009

Administrative Order on Consent

Dated June, 30, 2010

Quarterly Report No. 33

*Submitted:
December 20, 2017*

*Submitted To:
United States Environmental Protection Agency
Maryland Department of the Environment*

*Prepared By:
City of Baltimore
Department of Public Works,
Office of Engineering and Construction*

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A. Introduction:

The City of Baltimore owns and operates a public water supply system (PWS ID# MD0300002) that serves 1.8 million consumers in the Baltimore metropolitan area. The City of Baltimore has entered into a Settlement Agreement with the Maryland Department of the Environment (MDE), dated September 2, 2009, and has entered into an Administrative Order on Consent (AOC) with the United States Environmental Protection Agency (EPA), dated June 30, 2010 to comply with the EPA Long Term 2 Enhanced Surface Water Treatment Rule (LT2). This **Quarterly Report No. 33** covers project activities, with updates for the period of **September 01, 2017 through November 30, 2017**, is submitted pursuant to Article 3, paragraph 3.1 of the Settlement Agreement and Articles 26 and 27 of the AOC. The Settlement Agreement and AOC govern the City's efforts to comply with the LT2 Rule for the Towson Finished Water Reservoir, Montebello Filtration Plant 2 Finished Water Reservoir, Guilford Finished Water Reservoir, Druid Lake and Ashburton Lake Open Finished Water Reservoirs. Exhibit A, Status of Open Finished Water Reservoir Projects is attached to summarize the City's progress.

The requirements for the Quarterly Reports are specified in Article 3 of the Settlement Agreement, which reads as follows:

"3.1 The City agrees to report to MDE on a quarterly basis the City's progress on treatment, replacement or coverage of the five reservoirs. Reports shall include the status of each of the five reservoirs in meeting the deadlines set forth on the City of Baltimore Open Reservoir Replacement Plan, attached hereto in Exhibit B.

3.2 The first quarterly report shall be due 90 days after the effective date of the AGREEMENT. If for any reason, no progress has been made during a reporting period, this shall also be reported.

3.3 All reports must be written and are to be sent via U.S. mail, fax or email to the contact person named below who will be responsible for overall coordination and oversight relating to the performance of this AGREEMENT:

*Mr. Saeid Kasraei
MDE Water Supply Program
1800 Washington Boulevard, Suite 450
Baltimore, MD 21230
410-537-3157 (fax)
skasraei@mde.state.md.us*

The requirements for the AOC Quarterly Reports are specified in Articles 26 and 27, with Article 27 declaring that the requirements of Article 26 are satisfied by the City's submission of the MDE Settlement Agreement Quarterly Reports. All reports shall be sent to:

*Lisa Donahue
Ground Water and Enforcement Branch (3WP22)
U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029
donahue.lisa@epa.gov*

**LT2 Settlement Agreement & Administrative Order on Consent
Open Finished Water Reservoirs – Quarterly Report No. 33**

B. Current Status:

1) Towson Finished Water Reservoir - WC-1164:

Background: The existing Towson Finished Water Reservoir is a 15.7 million gallon earthen impoundment, constructed in 1927, has a usable capacity of 9.0 million gallons and serves the Eastern Third Zone of the City's system. The City opened bids on February 3, 2010 for construction of WC-1164, awarded Whiting-Turner Contracting Company, Inc. the contract for the low bid of \$18,393,000 on May 2, 2010, and issued the Notice-To-Proceed on July 12, 2010. The construction duration was 1,155 calendar days and the projected construction substantial completion date was May 31, 2013. The West Basin of the existing reservoir was taken off-line to permit construction of the new reservoir. The contract value increased to \$19,257,148 as a result of minor change orders for additional tree removal, storm water piping modifications, level sensor replacement, and final testing. The construction activities have progressed to 100% as of December 22, 2013. Both basins have been completed, tested and placed into service. This project has complied with the Maryland Department of the Environment Settlement Agreement and the EPA Administrative Order on Consent.

2) Montebello Filtration Plant 2 Finished Water Reservoir – WC-1160R:

Background: The existing Montebello Filtration Plant 2 Finished Water Reservoir is a 36.0 million earthen impoundment, constructed in 1928, has a usable capacity of 10.9 million gallons and serves the First Zone of the City's system. The City opened bids on October 28, 2009 for the construction of WC-1160R, awarded Allan A. Myers Co. the contract for the low bid of \$36,922,950, and issued the Notice-To-Proceed on December 21, 2009. The construction duration was 1,400 calendar days, which projected the construction substantial completion date for June 30, 2014. The existing open reservoir was taken off-line for demolition activities and construction of the new reservoir. The contract value increased to \$43,578,240 as a result of unforeseen subsurface conditions and foundation modifications. The construction activities have progressed to 100% completion stage. Both basins have been tested and were placed into service on May 27, 2014. This project has complied with the Maryland Department of the Environment Settlement Agreement and the EPA Administrative Order on Consent.

3) Guilford Finished Water Reservoir – WC-1173R:

Background: The existing Guilford Finished Water Reservoir is a 36.0 million gallon earthen impoundment, constructed in 1893, has a usable capacity of 8.5 million gallons and serves the Eastern Third Zone of the City's system. The Consultant agreement for design services was approved by the City and the PHR&A / Hazen and Sawyer Joint Venture was issued a Notice-To-Proceed on December 15, 2010. Due to the community opposition, the study agreement was extended four times until community outreach was concluded on January 19, 2010. The study phase of the project is 100% complete, with the Final Report delivered on April 28, 2010. The Guilford Reservoir project has experienced significant delays due to the public outreach efforts, requiring the design team to prepare an accelerated schedule in an effort to recover part of the lost time.

Quarter Update: The design phase has progressed to 100% complete and community outreach efforts continue to receive public comments impacting construction phase activities and delaying advertisement for bids. The City is progressing with the design of major improvements to the Guilford Pumping Station located adjacent to the Guilford Reservoir project. The construction activities associated with both projects will require close coordination and cooperation between current design consultants and future contractors. The Guilford Finished Water Reservoir Improvements WC-1173 was advertised for construction on May 30, 2014. On March 31, 2015 EPA approved the City's request for revised design completion and construction start and completion dates. WC-1173 bids were opened on August 27, 2014 and were rejected. WC-1173R was re-advertised for bids on July 17, 2015. Pre bid meeting was held on August 07, 2015. Bids were received and opened on September 23, 2015. The construction contract for WC-1173R was awarded to Allan Myers, Inc. on December 9, 2015 for \$54,444,777. The construction Notice-To-Proceed was issued February 25, 2016 and was effective February 29, 2016. **Progress Meeting No. 20 dated November 22, 2017 reported 50% work completed.**

4) Druid Lake – WC-1204:

Background: The existing Druid Lake Finished Water Reservoir is a 338.5 million gallon earthen impoundment, constructed in 1871, has a usable capacity of 218.5 million gallons and serves the First Zone of the City's system. The consultant was selected and the preliminary scope of work received and reviewed by the project manager. Due to the requirement for an extended water quality and UV performance testing period to develop project specific design criteria, the project schedule called for the study to be complete on February 28, 2012, the design to be completed on February 28, 2014, the construction notice-to-proceed to be issued on July 1, 2014, and the construction to be substantially completed on June 25, 2018. The City approved the study/design services agreement and issued Whitman, Requardt & Associates a Notice-To-Proceed effective October 6, 2010. The City has re-evaluated options for LT2 compliance and has authorized Whitman, Requardt & Associates to redirect the design efforts to a more comprehensive long-term protection of the City's water supply with covered finished water reservoirs.

Quarter Update: The community outreach efforts are continuing. The City issued a design notice to proceed on November 20, 2013. On March 31, 2015, EPA approved the City's request for revised design completion and construction start and completion dates. The design phase has progressed to the 100% and was received for review on November 5, 2015. The project bids were opened July 27, 2016, with Oscar Renda submitting the apparent low bid of \$134,487,493. During the bid review process, a bid protest was filed that required an extended review and research process, resulting in the award of WC 1204 to Oscar Renda. A revised Notice-To-Proceed was issued to Oscar Renda at the Pre-Construction meeting on February 23, 2017 effective on April 10, 2017. **Progress Meeting No. 6 on December 19, 2017 reported 8% work completed.**

5) Ashburton Lake – WC-1211:

Background: The existing Ashburton Lake Finished Water Reservoir is a 220 million gallon earthen impoundment, constructed in 1910, has a usable capacity of 70.4 million gallons and serves the Second Zone of the City's system. Consultant evaluation/selection process has been completed, with consultant interviews conducted on January 27, 2010, culminating in the selection of Hazen & Sawyer/AECOM Joint Venture (JV Team). The project schedule called for the study to

be complete on January 10, 2013, the design to be complete on May 29, 2014, the construction notice-to-proceed to be issued on December 31, 2014, and the construction to be substantial complete on December 31, 2018. The agreement for the study/design services has been approved by the City and the Hazen and Sawyer / AECOM Joint Venture was issued a Notice –To-Proceed on January 12, 2011. The Consultant has completed the 1-year water quality monitoring program. The City has re-evaluated options for LT2 compliance and has authorized the Hazen and Sawyer/AECOM Joint Venture to redirect the design efforts to a more comprehensive long-term protection of the City's water supply with covered finished water reservoirs.

Quarter Update: The community outreach efforts are continuing. The City issued a design notice to proceed on May 28, 2014. On March 31, 2015, EPA approved the City's request for revised design completion and construction start and completion dates. The 100% design phase was submitted for review on May 6, 2016. The City advertised WC 1211 for construction bids on October 14, 2016 and held a Pre-Bid Meeting for prospective bidders on November 1, 2016. The project bids were opened January 18, 2017, with Renda/J Bros. Joint Venture submitting the apparent low bid of \$136,964,200. During the bid review process, a bid protest was filed that required an extended review and research process. The Maryland Department of the Environment has approved the award of WC 1211 to Renda/J Bros. Joint Venture. The City of Baltimore approved WC 1211 for award on July 19, 2017. **The City of Baltimore is projecting Notice-To-Proceed in January 2018.**

C. Interim Operations and Monitoring Activities:

The City of Baltimore has taken interim measures and actions to provide the citizens of the metropolitan Baltimore region with a sound, safe, and secure water supply by way of automated and manual monitoring of the open finished water reservoirs and by way of operating post-disinfection systems to maintain required residuals. While some of these efforts were part of the City's standard operating procedures, the overall system monitoring efforts were heightened and have been in effect since September 2001.

D. Public Notification Activities:

The City of Baltimore issued the Public Notifications required by the AOC via the City's website on July 30, 2010, and legal notice in the Baltimore Sun Newspaper dated August 3, 2010. Additional Public Notifications issued via the routine 90-day utility billing cycle began in August and has been completed as of November 17, 2010, in an effort to reach the City of Baltimore water system customers. Future Public Notifications will be published and distributed with the City's annual Consumer Confidence Reports (CCR). In order to comply with the July 1st CCR deadline, the City will begin the next 90-day utility billing cycle / CCR distribution in March.

We trust that this Quarterly Report adequately portrays the information required by the MDE Settlement Agreement and the EPA Administrative Order on Consent. If you have any questions or require further clarification, please do not hesitate to contact Mr. Rudolph S. Chow, Director of the Department of Public Works, at 410-396-3310 or Mr. Azzam Ahmad, Acting Chief of the Office of Engineering and Construction at 410-396-3437.

***LT2 Settlement Agreement & Administrative Order on Consent
Open Finished Water Reservoirs – Quarterly Report No. 33***

Appendix A
Status of Open Finished Water Reservoir Projects
December 20, 2017

SLNo.	Project Location	Water Contract No.	Consultant	Description	Actual (A) Compliance Dates or Projected (P) Dates based on request pending MDE/EPA approval. Revised (R) Dates based on EPA March 31, 2018 Letter.						Status/Comments
					Study Completion Percentage	Design Completion	Design Completion Percentage	Construction Notice To Proceed	Construction Completion Percentage	Construction Substantially Complete	
1	Towson Reservoir	WC-1104	Garnett Fleming, Inc.	Earthen impoundment, rated capacity of 15.7 million gallons with usable capacity of 9.0 million gallons, originally constructed in 1927, and serving the Eastern Third Zone. Covered storage options will be utilized to comply with the LT2 Rule.	100%	12/18/2009 (A)	100%	7/1/2010 (A)	100%	12/22/2013 (A)	The City opened bids on 2/29/2010 for construction of WC 1104, awarded Whiting-Turner Contracting Company, Inc. the contract for the low bid of \$13,393,000 on 3/2/2010, and issued NTP on 7/1/2010. The West Basin was placed into service on October 25, 2012, 6 months ahead of the Substantial Completion date of 5/31/2013. Construction is 100% complete as of December 21, 2013. The contract value has increased to \$15,000,000. The City is currently reviewing the contract for additional fee increases, storm water piping modifications and final storm replacement.
2	Montebello 2 Reservoir	WC-1100R	Whitman, Requardt & Associates	Earthen impoundment, rated capacity of 36 million gallons with usable capacity of 19.9 million gallons, originally constructed in 1928, and serving the Eastern Third Zone. Covered storage options will be utilized to comply with the LT2 Rule.	100%	10/13/2009 (A)	100%	12/21/2009 (A)	100%	5/27/2014 (A)	The City opened bids on 10/23/2009 for construction of WC 1100R, awarded Allen A. Myers, LP the contract for the low bid of \$38,922,920, and issued NTP on 12/1/2009. The existing open reservoir has been taken off-line for demolition and construction of the new reservoir. The contract value has increased to \$43,576,240 as a result of addressing subsidence concerns and foundation modifications. Construction is 100% complete as of December 21, 2013. The contract value has increased to \$43,576,240. Construction is Substantially Complete as of May 27, 2014 with both reservoirs having been tested and placed into service, one month ahead of the schedule.
3	Gaithersburg Reservoir	WC-1173R	PHREA / Hazen and Sawyer JV	Earthen impoundment, rated capacity of 36 million gallons with usable capacity of 8.5 million gallons, originally constructed in 1961, and serving the Eastern Third Zone. Covered storage options will be utilized to comply with the LT2 Rule.	100%	1/10/2014 (A)	100%	2/25/2016 (A)	50%	7/6/2019 (P)	The construction contract for WC-1173R was awarded to Allen A. Myers, Inc. on December 9, 2013 for \$54,444,777. The contract was amended to \$54,444,777 on February 15, 2014 and was effective February 20, 2014. The construction has progressed to 50%, complete as reported at Progress Meeting No. 26 on November 22, 2017.
4	Druid Lake	WC-1204	Whitman, Requardt & Associates	Earthen impoundment, rated capacity of 338.5 million gallons with usable capacity of 218.5 million gallons, originally constructed in 1871, and serving the First Zone. Covered storage option will be utilized to comply with the LT2 Rule.	100%	1/05/2015 (A)	100%	4/16/2017 (A)	0%	6/31/2021 (R)	The design phase progressed to 100%, and was received for review on November 1, 2015. The project bids were opened July 27, 2016, with Oscar Benda submitting the apparent low bid of \$134,487,493. During the bid review process, a bid protest was filed that required an extended review and research process resulting in the award of WC 1204 to Oscar Benda. A Notice to Proceed was issued to Oscar Benda effective on April 14, 2017. The contract value has progressed to 0% complete as reported at Progress Meeting No. 6 on December 19, 2017.
5	Ashburton Lake	WC-1211	Hazen and Sawyer / AECOM JV	Earthen impoundment, rated capacity of 220 million gallons with usable capacity of 70.4 million gallons, originally constructed in 1910, and serving the Eastern Third Zone. Covered storage option will be utilized to comply with the LT2 Rule.	100%	5/06/2016 (A)	100%	1/31/2018 (P)	0%	12/31/2021 (P)	The 100% design phase was submitted for review on May 9, 2016. The City issued a Notice to Proceed on October 14, 2016 and issued a P-10-Bid Meeting for the project on November 1, 2016. The project bids were opened January 18, 2017, with Benda/J Stora Joint Venture submitting the apparent low bid of \$136,864,300. During the bid review process, a bid protest was filed that required an extended review and research process. The Maryland Department of the Environment has approved the award of WC 1211 to Benda/J Stora, Joint Venture. The City of Baltimore approved WC 1211 for award on July 16, 2017. The City of Baltimore is projecting Mobilize-16-Preceded in January 2018.

Towson and Montebello Finished Water Reservoir projects have complied with the Maryland Department of the Environment Settlement Agreement and the EPA Administrative Order on Consent.